# *Target-Base clamping systems for 3D scanning*

**dk**
FIXIERSYSTEME

# For every scanning process the optimum solution with Target-Bases, Target-Supports and fixating systems

Reference points, dot marks, targets, measurement marks or adhesive marks...
The designations for measuring points for referencing in the various scanning measurement technologies are very diverse. However, the problem is always the same: these self-adhesive points cause a lot of extra work when they are stuck directly onto the test specimen and then have to be removed again afterwards leaving no residues. The ideal scenario for many metrology technicians is that the measuring points are not stuck directly onto the component, but onto special elements that can be spatially positioned anywhere to suit the test specimen and the measuring task. dk offers many freely configurable solutions here that go far beyond simple frames.

**SWA39 clamping system & OCTOFIX frames**

For holding small parts and positioning Target-Bases
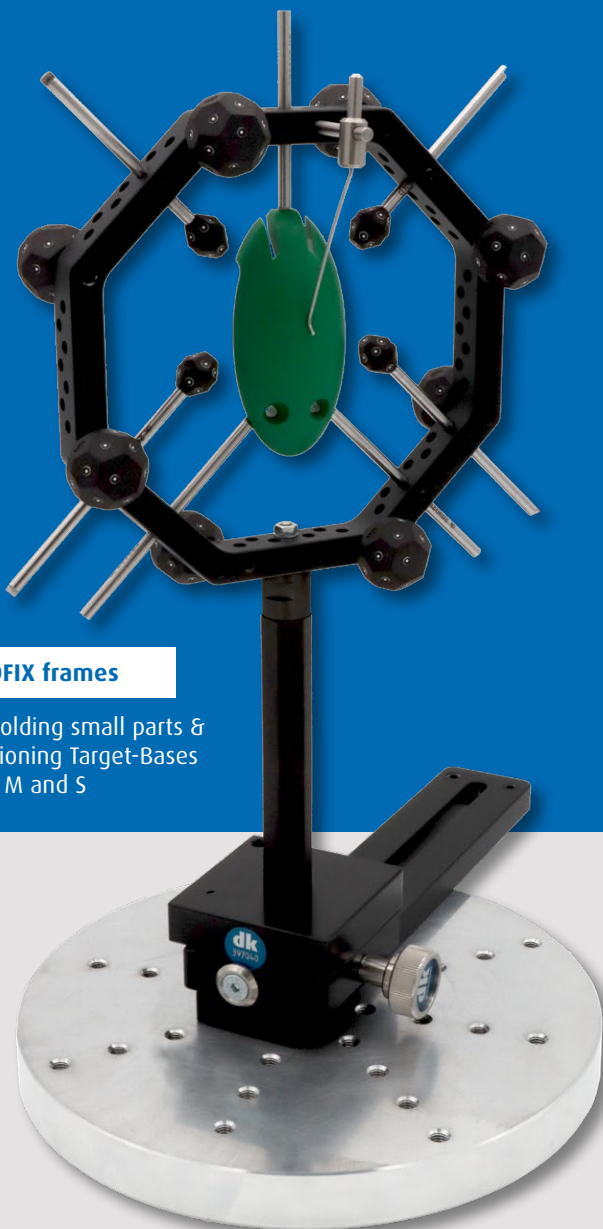
**OCTOFIX frames**

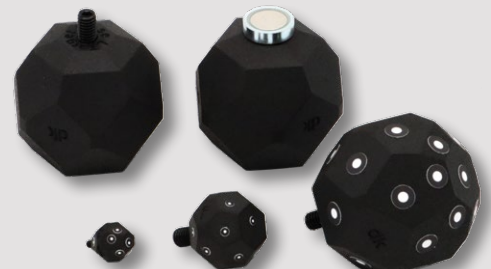For holding small parts & positioning Target-Bases sizes M and S

**QUADERFIX reversible frames** — For part fixation with freely positional Target-Bases on SPANNFIX ECO baseplates
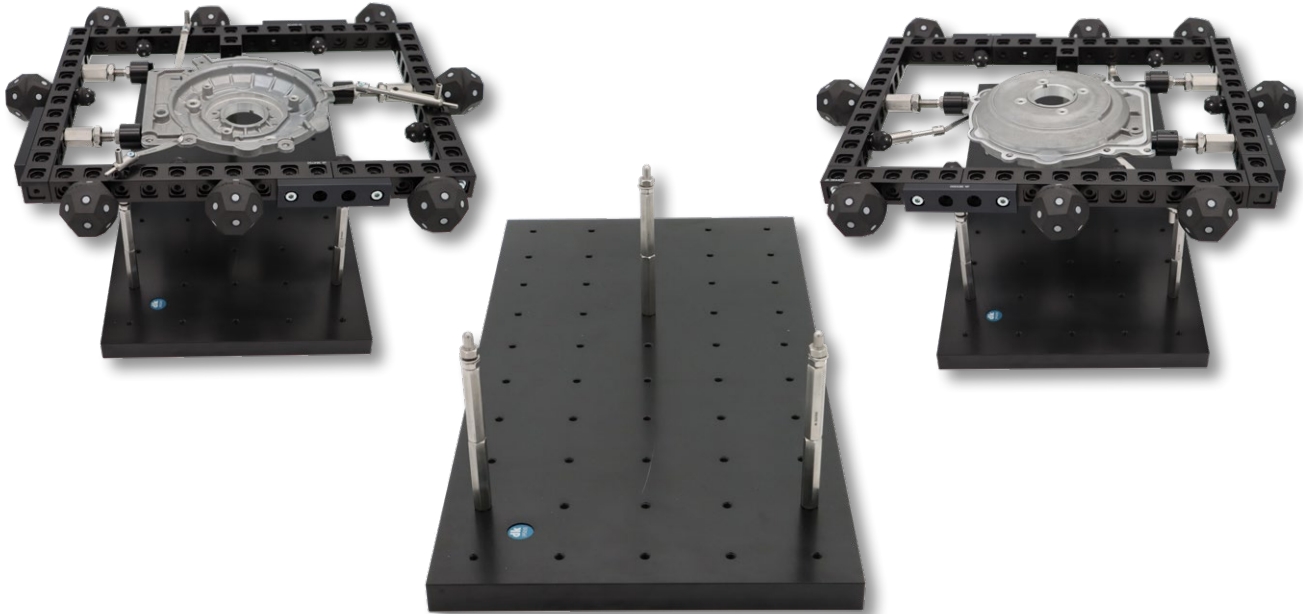


**QUADERFIX clamping system** — For holding larger parts with Target-Bases on a freely positionable fixating system



## Target-Bases
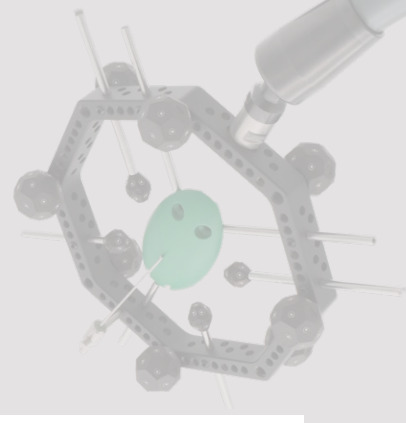
» Different sizes with up to 31 faces per base

» With thread or magnet

» For conventional dot marks from Ø 0.8 to 12 mm

**SPANNFIX PRO clamping system** — For fixating complex parts combined with articulated arms for 3D positioning of the Target-Bases via Target-Supports

# Module system OCTOFIX as stationary frame

## OCTOFIX set

Perfection though module system and SWA39 quick-change interface:

» Base rail for exact alignment in the axis of rotation

» SWA39 quick-change interface for efficient changes between different pre-setup fixations

» Secure fixation of the test specimen with minimal concealment by retaining elements

» Repeat accurate part fixation by series measurements

» Reference marks remain in the set position

## OCTOFIX frames

Wide field of applications through comprehensive module system:

» Frames with many connection and adjustment possibilities

» Functional pins with female thread and stepped support on the opposite side for use as a holder for both the component and the Target-Bases

» Infinite radial adjustment of the functional pin with secure locking with a grubscrew

» Freely positional spring finger with column for part fixation

» Target-Bases size M for screwing onto the frame and size S for screwing onto the adjustable pin

# *Components of OCTOFIX*

## Sets

### OCTOFIX basic set

| Description | Order number |
|---|---|
| Set contains 1 x quick-action clamp on a base rail (263715); 1 x 200 mm OCTOFIX frame complete with substructure (441100); 6 x 60 mm functional pins (269028); 6 x 80 mm functional pins (269029); 3 x 100 mm functional pins (269030); 2 x M4 columns for spring fingers (269042); 2 x Ø 4 mm spring fingers, L 60 mm (269039); 2 x M6 columns for spring fingers (368200); 2 x Ø 6 mm spring fingers, L 95 mm (302780); 10 x Target-Bases size S (441000); 10 x Target-Bases size M (441010) | 441200 |

## Individual components

### SWA39 quick-action clamp on an adjustable base rail

| Description | Order number |
|---|---|
| For mounting on turntable or baseplate with threads; adjustment range 170 mm; with M 5, M 6 and M 8 fastening screws | 263715 |

### SWA39 200 mm OCTOFIX frame for parts up to Ø 160 mm compl. with substructure

| Description | Order number |
|---|---|
| Frame, 100 mm elevating column and SWA39 quick-change adapter; with Ø 4 mm mounting hole for functional pin, M6 thread for Target-Bases M and M 4 thread with grubscrew for locking the fixating pin or Target-Base pin; each thread can also be used for the mounting column for M 4 and M 6 spring fingers | 441100 |

### Ø 4 mm functional pin for part fixation and Target-Base bracket

| Description | Order number |
|---|---|
| One side with M 2.5 female thread / other side with stepped support; L 60 mm | 269028 |
| One side with M 2.5 female thread / other side with stepped support; L 80 mm | 269029 |
| One side with M 2.5 female thread / other side with stepped support; L 100 mm | 269030 |

### Column with thread for spring finger

| Description | Order number |
|---|---|
| Ø 4 mm; M 4; L 30 mm for spring finger 269039 | 269042 |
| Ø 6 mm; M 6; L 50 mm for spring finger 302780 | 368200 |

### Spring finger, round type

| Description | Order number |
|---|---|
| Adapter Ø 4 mm; L 60 mm; wire thickness 1.1 mm | 269039 |
| Adapter Ø 6 mm; L 95 mm; wire thickness 1.5 mm | 302780 |

### Thrust clamp Ø 4 mm, sprung

| Description | Order number |
|---|---|
| L 115 mm; spring travel 15 mm; conical tip and 3D joint | 269057 |

### Target-Base size S and M, 10 piece set (no adhesive marks)

| Description | Order number |
|---|---|
| 10 x S with 13 faces; M 2.5 thread; suitable for Ø 1.5 mm reference points | 441000 |
| 10 x M with 19 faces; M 6 thread; suitable for Ø 3 mm reference points | 441010 |

# Fixating system SWA39 + OCTOFIX Target-Frames

**Universal test piece fixating system SWA39 with quick-change interface for medium sized parts**

» Base rail for exact alignment in the axis of rotation

» SWA39 quick-change interface for efficient changes between different clamping devices and pre-setup clamped parts

» Secure fixation of the test specimen with minimal concealment by retaining elements

» Simple and repeat accurate part fixation by series measurements

» SWA39 module system with wide selection of clamping devices in various sizes and with diverse accessories





**Universal Target-Base system OCTOFIX with a 3D articulated arm suitable for SWA39**

» Frame with fastening possibilities for up to 16 Target-Bases size M each with 19 faces

» Hex column as extension for positioning the Target-Bases spaced at 50 mm to the frame and so up to 100 mm from each other

» High-strength 3D articulated arm with central lock and toothed ring for maximum stability and strength of the Target-Bases

» Perfect positioning of the targets for maximally efficient process

## Example applications



Many other solutions from the dk fixating programs Can be used for scanning but also with tactile and optical measuring machines, computed tomography, surface and contour measuring machines etc.

# SWA39 + OCTOFIX components

## Sets

### OCTOFIX basic set SWA39 vice

| Description | Order number |
| --- | --- |
| Set contains 1 x quick-action clamp on a base rail (263715); 1 x 50 mm precision vice set (440030); 4 x 35 mm steel dowel pins (282310); 4 x 80 mm carbon dowel pins (440040); 1 x adjustable base rail (245150); 1 x TurnStop articulated joint (241030); 1 x 200 mm OCTOFIX frame (441105); 10 x Target-Bases size M (441010); 6 x M6 columns for Target-Base (441050) | 441210 |

## Individual components

### SWA39

### SWA39 quick-action clamp on an adjustable base rail

| Description | Order number |
| --- | --- |
| For mounting on turntable or baseplate with threads; adjustment range 170 mm; with M5, M6 and M8 fastening screws | 263715 |

### 50 mm precision vice set with SWA39 interface

| Description | Order number |
| --- | --- |
| Jaw width 50 mm; clamping width 35 mm with exchange set for 75 mm; incl. actuating knob 282101 | 440030 |

### Round clamp intermediate element

| Description | Order number |
| --- | --- |
| Steel; straight stepped; L 35 mm; 1 set of 4 | 282310 |
| Carbon; straight stepped; L 80 mm; 1 set of 4 | 440040 |

### OCTOFIX

### Adjustable base rail for M5, M6 and M8

| Description | Order number |
| --- | --- |
| For mounting on turntables; adjustment range 170 mm; mounting of articulated arm via M8 | 245150 |

### TurnStop articulated joint TS-280 with 280 mm action radius

| Description | Order number |
| --- | --- |
| For arbitrary spatial positioning of the OCTOFIX frames; Lower connector thread M8; upper connector thread for OCTOFIX M8; high-strength central locking with progressive clamping sequence and toothed disc | 241030 |

### 200 mm OCTOFIX frame for parts up to Ø 160 mm

| Description | Order number |
| --- | --- |
| Frame for mounting on 3D articulated arm with a Ø 4 mm mounting hole for functional pins, M6 thread for Target-Bases M and M4 thread with grubscrew for locking the fixating pin or Target-Base pin; each thread can also be used for the mounting column for M4 and M6 spring fingers | 441105 |

### Hex column with M6 thread for Target-Bases

| Description | Order number |
| --- | --- |
| L 50 mm; 6 faces for adhesive marks; for screwing onto OCTOFIX | 441050 |

### Target-Base size M, 10 piece set

| Description | Order number |
| --- | --- |
| 10 x M with 19 faces; M6 thread; suitable for Ø 3 mm reference points | 441010 |

# QUADERFIX fixating system + Target-Bases



## Universal test piece and Target-Base fixating system QUADERFIX for large parts

» Module system for constructing arbitrary fixtures from standard square elements

» Non-rotating construction of connections for a high-strength 3D configuration

» Wide choice of structural elements, extensions, supports and clamping elements

» Compatible with all other dk fixating programmes for infinite variations

» 4 side direct adaptation of Target-Bases on M6 threads in a 25 mm grid
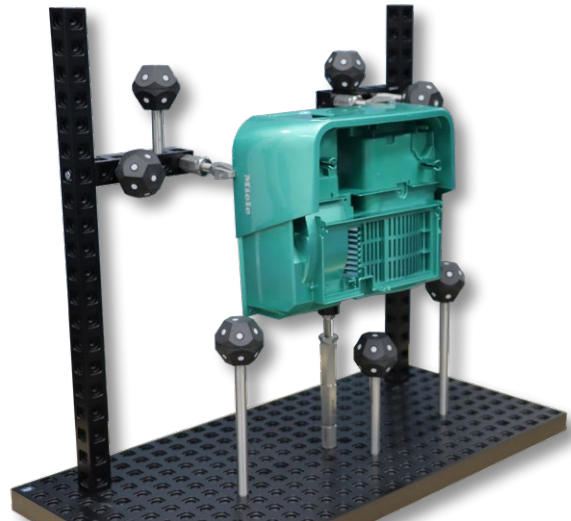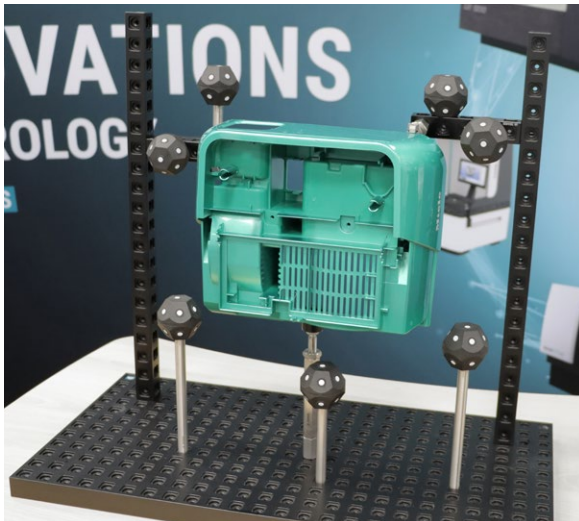




## Reversible frame constructions from the QUADERFIX programme

» The modular system also permits the configuration of rectangular or free-form frames

» Test specimens secured by means of supports and clamping elements can be rotated through 180° together with the frame and Target-Bases and securely repositioned

» Baseplate either on the machine or from one of the dk fixating programmes
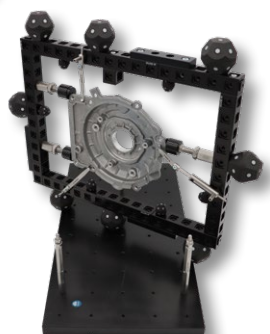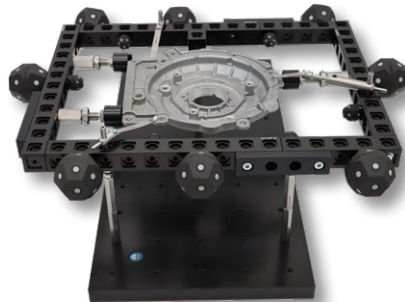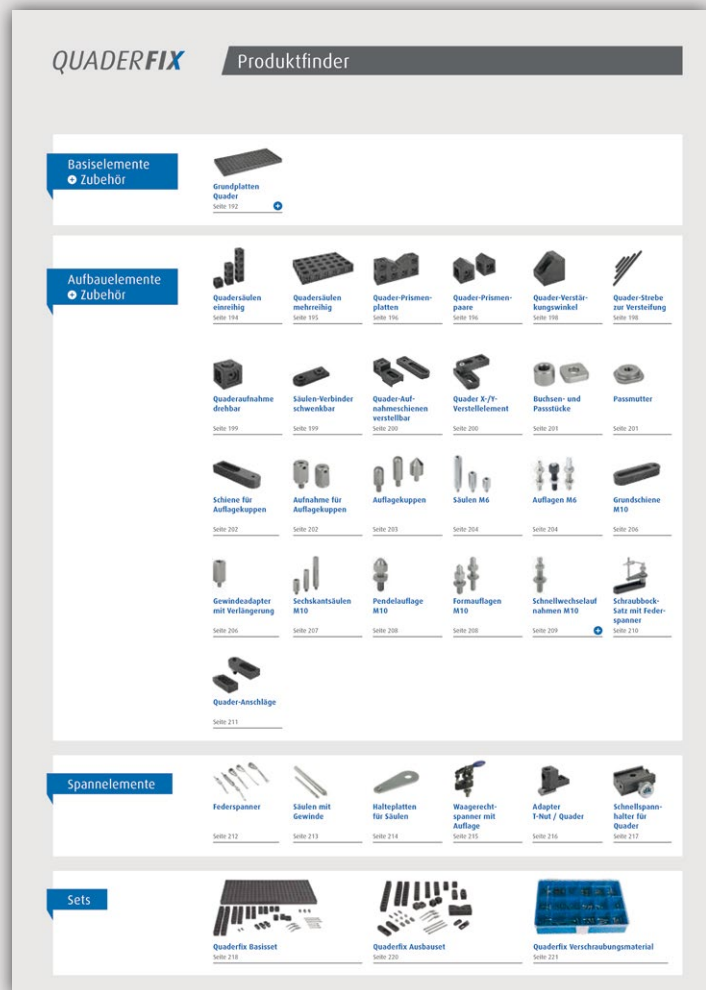
# QUADERFIX + Target-Bases components

QUADERFIX basic set item No. 369915
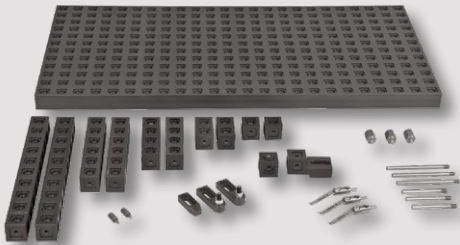


QUADERFIX expansion set item No. 369930



QUADERFIX fastening set item No. 369800





QUADERFIX    Produktfinder

| Basiselemente ⊕ Zubehör | | | | | | |
|---|---|---|---|---|---|---|
| | Grundplatten Quader Seite 192 | | | | | |

| Aufbauelemente ⊕ Zubehör | | | | | | |
|---|---|---|---|---|---|---|
| | Quadersäulen einreihig Seite 194 | Quadersäulen mehrreihig Seite 195 | Quader-Prismen-platten Seite 196 | Quader-Prismen-paare Seite 196 | Quader-Verstär-kungswinkel Seite 198 | Quader-Strebe zur Versteifung Seite 198 |
| | Quaderaufnahme drehbar Seite 199 | Säulen-Verbinder schwenkbar Seite 199 | Quader-Auf-nahmeschienen verstellbar Seite 200 | Quader X-/Y-Verstellelement Seite 200 | Buchsen- und Passstücke Seite 201 | Passmutter Seite 201 |
| | Schiene für Auflagekuppen Seite 202 | Aufnahme für Auflagekuppen Seite 202 | Auflagekuppen Seite 203 | Säulen M6 Seite 204 | Auflagen M6 Seite 204 | Grundschiene M10 Seite 206 |
| | Gewindeadapter mit Verlängerung Seite 206 | Sechskantsäulen M10 Seite 207 | Pendelauflage M10 Seite 208 | Formauflagen M10 Seite 208 | Schnellwechselauf-nahmen M10 Seite 209 | Schraubbock-Satz mit Feder-spanner Seite 210 |
| | Quader-Anschläge Seite 211 | | | | | |

| Spannelemente | | | | | | |
|---|---|---|---|---|---|---|
| | Federspanner Seite 212 | Säulen mit Gewinde Seite 213 | Halteplatten für Säulen Seite 214 | Waagerecht-spanner mit Auflage Seite 215 | Adapter T-Nut / Quader Seite 216 | Schnellspann-halter für Quader Seite 217 |

| Sets | | | |
|---|---|---|---|
| | Quaderfix Basisset Seite 218 | Quaderfix Ausbauset Seite 220 | Quaderfix Verschraubungsmaterial Seite 221 |

*The entire QUADERFIX module system covers 33 pages of the dk catalogue*

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## Individual components

### Target-Base size M and L, 10 piece set

| Description | Order number |
|---|---|
| 10 x M with 19 faces; M6 thread; suitable for Ø 3 mm reference points | 441010 |
| 10 x L with 31 faces; M6 thread; suitable for Ø 8 mm reference points | 441020 |
| 10 x XL with 31 faces; M6 thread; suitable for Ø 12 mm reference points | 441030 |
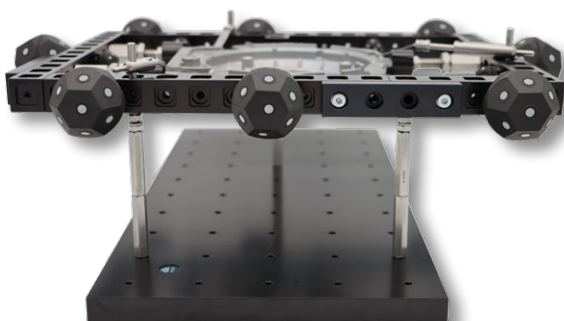
# SPANNFIX fixating system + Target-Support



## SPANNFIX fixating programme

These fixation programmes developed for conventional measuring technologies offer solutions for all conceivable test part setups in the scanning domain.

- » Several proven and comprehensive modular systems that can all be combined with each other
- » Very wide choice of basic and structural elements, extensions, supports and clamping elements
- » Process optimised designed fixtures made from standard parts
- » Precise repeatable positioning when measuring identical parts
- » Target-Bases adaptable directly to the fixating system or indirectly via articulated arms
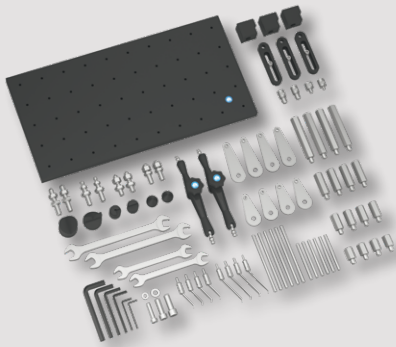
## Target-Support

The reference points are perfectly positioned via 3D articulated arms using Target-Supports and Target-Bases.

- » No adhesive dots on the specimen
- » Modular principle also by fixating and positioning the measuring marks
- » Very rapid placement of the measuring marks used for positioning as these are already stuck onto the Target-Bases
- » Very easy to readjust and supplement if reference points are missing
- » Can be dismantled & reconfigured as often as required
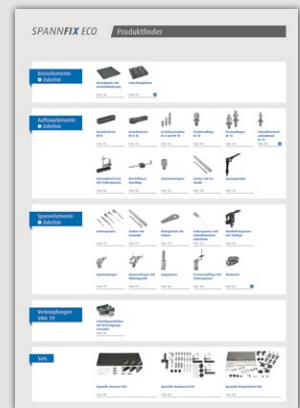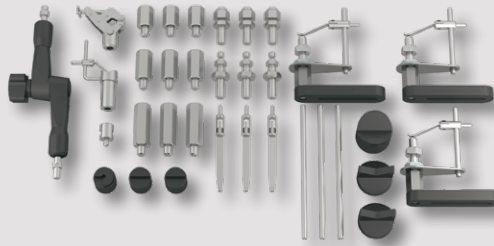- » Precise and very robust

# SPANNFIX ECO components



SPANNFIX ECO starter set item No. 285180

SPANNFIX ECO expansion set item No. 285155

*The entire SPANNFIX module system covers 33 pages of the dk catalogue

# 3D joint + Target-Support components

## Sets

### 3D Joint set with Target-Supports

| Description | Order number |
|---|---|
| Set contents: 1 x adjustable base rail for articulated arm (245150); 1 x TurnStop articulated joint (241030); Target-Support rail (441060); 4 x M6 hex columns for Target-Bases (441050); 10 x Target-Bases size M (441010); 10 x Target-Bases size L (441020) | 441220 |

## Individual components

### Adjustable base rail for M5, M6 and M8

| Description | Order number |
|---|---|
| For mounting on turntables; adjustment range 170 mm; mounting of articulated arm via M8 | 245150 |

### TurnStop articulated joint TS-280 with 280 mm action radius

| Description | Order number |
|---|---|
| For arbitrary spatial positioning of the OCTOFIX frames; Lower connector thread M8; upper connector thread for OCTOFIX M8; high-strength central locking with progressive clamping sequence and toothed disc | 241030 |

### 200 mm Target-Support rail with 6 faces

| Description | Order number |
|---|---|
| With central M8 thread for adaption to TurnStop articulated joint; 14 x M6 threads for adaption to Target-Bases M, L and hex columns | 441060 |

### Hex column with M6 thread for Target-Bases

| Description | Order number |
|---|---|
| L 50 mm; 6 faces for adhesive marks; for screwing onto Target-Support rails | 441050 |

### Target-Base size M and L, 10 piece set

| Description | Order number |
|---|---|
| 10 x M with 19 faces; M6 thread; suitable for Ø 3 mm reference points | 441010 |
| 10 x L with 31 faces; M6 thread; suitable for Ø 8 mm reference points | 441020 |
| 10 x XL with 31 faces; M6 thread; suitable for Ø 12 mm reference points | 441030 |

# *Freely configurable fixtures via 3D downloads*

Part and process specific clamping can be individually configured. Easy 3D data downloads of all dk fixating systems from our homepage. Multi-clamping is also possible. The modular construction systems from dk, with more than 1,000 parts, enable endless multiple use th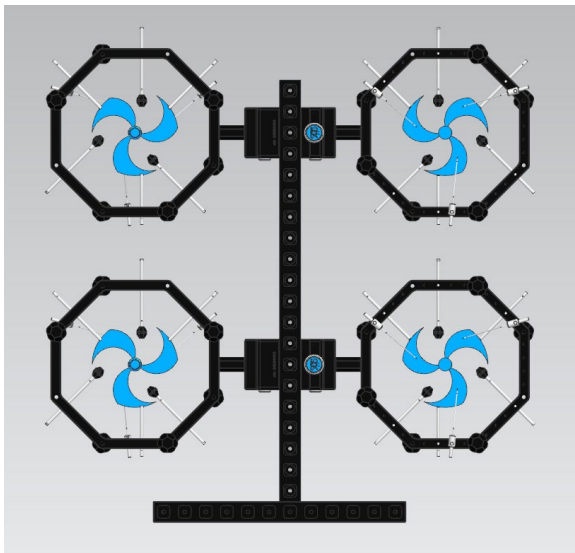rough rapid dismantling into the individual components and repeated reconfiguration into further solutions, true to our credo:
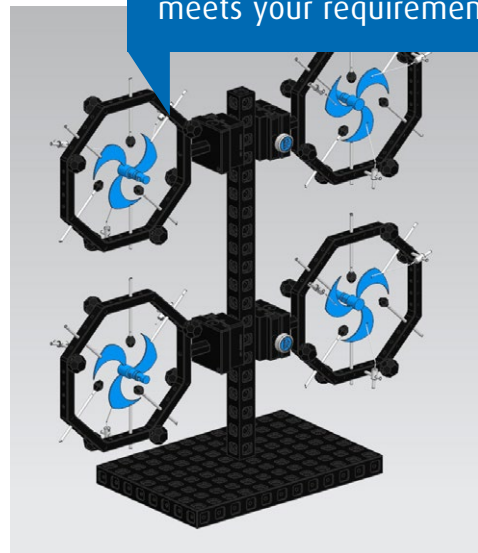
*FAST. REASSEMBLY. LIFELONG.*

## 3D data

Quicker downloads of all CAD data directly from the dk homepage. Simple, free and in any data format.

## 3D designer service and user consultation from dk:
We use your product, system and 3D data to develop a solution that meets your requirements

## Example applications





# Custom-made products and automation

We also realise custom-made products without or with only partial use of standard parts.
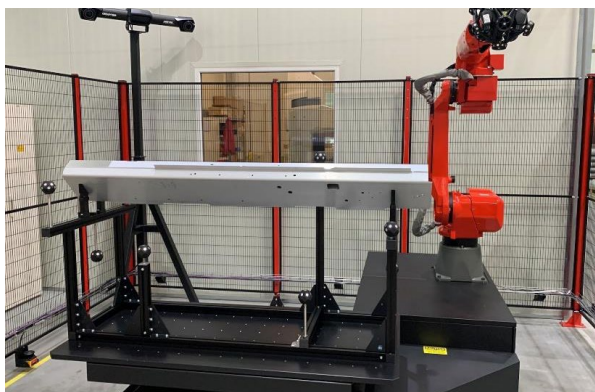
In doing so, we follow the trend towards automation, where 3D scanning runs in completely unmanned systems.

# Mobile multifunctional measurement table for applications with 3D scanners

Perfect 3D scanning with dk function tables:
Easy adaptation of all dk fixation systems for fixtures that support the complete scanning of the test specimen in one go. The turntable in the form of a threaded plate, which can be rotated through 360°, supports this perfectly. Mobile version with lockable swivel castors.
Standard version or customer-specific.

The interchangeable threaded grid plate serves as the overall basis for direct mounting of fixation devices and target bases. Mounts for measuring arm, computer, screen and any other equipment can be added on a modular basis. Tools, adhesive points, scanning sprays and more find the ideal storage space directly on the shelf or in the drawers..
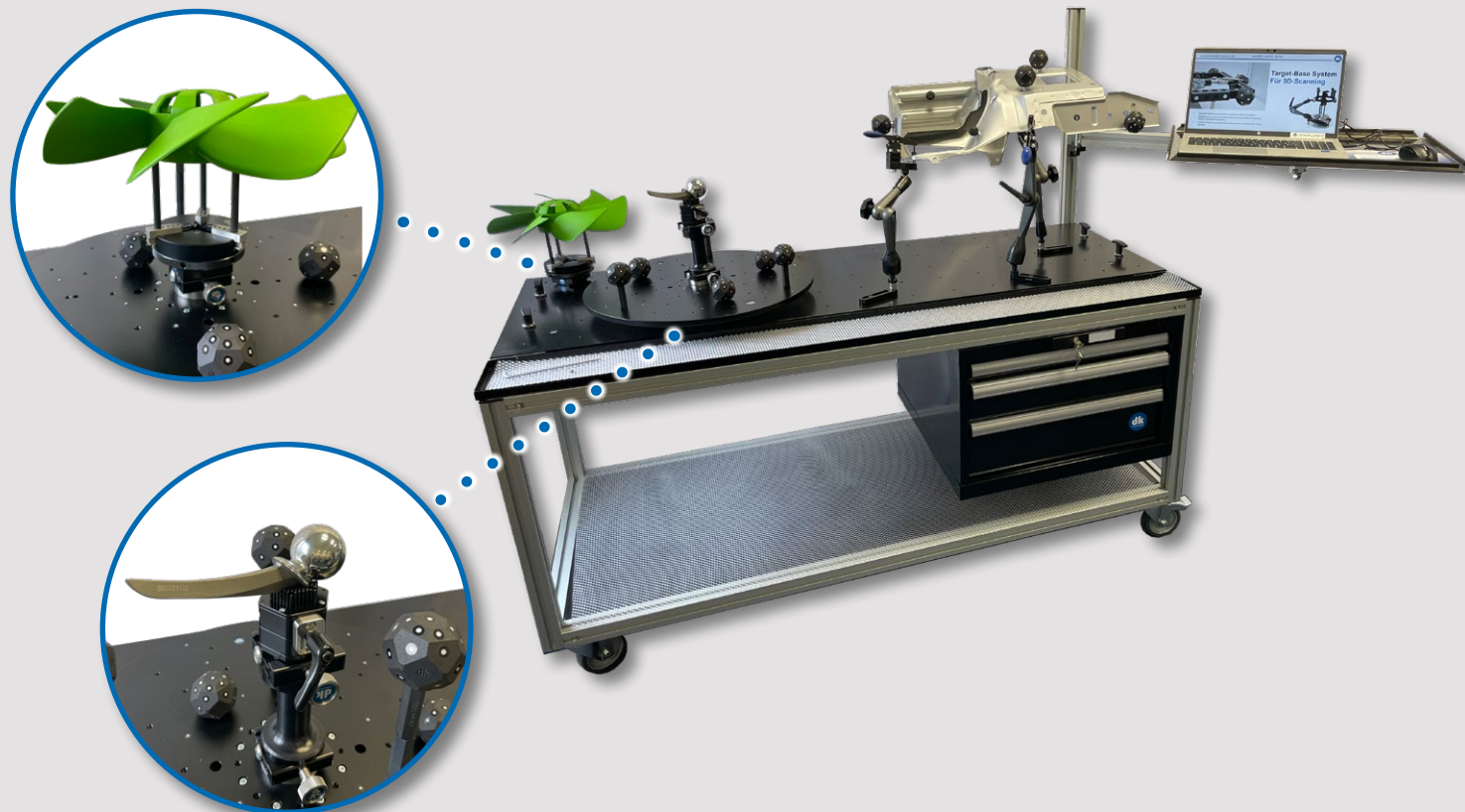


## Magnet Target-Base removes the need to stick onto the test specimen

For magnetic capable test objects, the Target-Bases from dk can also be used as a magnetic variant: the reference points can thus be placed as desired, quickly repositioned and finally simply removed.

### Magnetic Target-Base size M and L, 10 piece set

| Description | Order number |
|---|---|
| 10 x M with 19 faces;magnetic; suitable for Ø 3 mm reference points | 441010-M |
| 10 x L with 31 faces; magnetic; suitable for Ø 8 mm reference points | 441020-M |
| 10 x XL with 31 faces; magnetic; suitable for Ø 12 mm reference points | 441030-M |
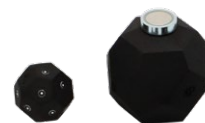
The magnetic dk Target-Bases are particularly suitable for very large objects, where a Target-Support fixture is uneconomical, but the adhesion and removal of multiple reference points is costly and time-consuming. The high magnetic force provides security for precise measurements.

# Reference points, dot marks, targets & measurement marks as adhesive marks

Self-adhesive measuring points developed by measuring technology and print experts, in the most frequently requested sizes and at an economical cost. Suitable for almost all optical scan systems.

## PREMIUM - white / black - reference targets

| Order number | Size | Targets per box | Colour | Adhesive strength | Quality |
|---|---|---|---|---|---|
| 56000101 | 0.2 mm | 4,000 | white/black | Standard | Premium |
| 56000102 | 0.4 mm | 4,000 | white/black | Standard | Premium |
| 56000103 | 0.8 mm | 4,000 | white/black | Standard | Premium |
| 56000104 | 1.0 mm | 4,000 | white/black | Standard | Premium |
| 56000105 | 1.5 mm | 4,000 | white/black | Standard | Premium |
| 56000106 | 2.0 mm | 3,000 | white/black | Standard | Premium |
| 56000107 | 3.0 mm | 3,000 | white/black | Standard | Premium |
| 56000108 | 5.0 mm | 2,500 | white/black | Standard | Premium |
| 56000109 | 8.0 mm | 1,200 | white/black | Standard | Premium |
| 56000110 | 0.2 mm | 4,000 | white/black | Strong | Premium |
| 56000111 | 0.4 mm | 4,000 | white/black | Strong | Premium |
| 56000112 | 0.8 mm | 4,000 | white/black | Strong | Premium |
| 56000113 | 1.0 mm | 4,000 | white/black | Strong | Premium |
| 56000114 | 1.5 mm | 4,000 | white/black | Strong | Premium |
| 56000115 | 2.0 mm | 3,000 | white/black | Strong | Premium |
| 56000116 | 3.0 mm | 3,000 | white/black | Strong | Premium |
| 56000117 | 5.0 mm | 2,500 | white/black | Strong | Premium |
| 56000118 | 8.0 mm | 1,200 | white/black | Strong | Premium |

### Premium quality on a sheet

**Highend print:**
Highest contrast & print definition

**Precut:**
Laser cut for perfect handling & precision

## RETRO - reference targets

| Order number | Size | Targets per box | Colour | Adhesive strength |
|---|---|---|---|---|
| 56000301 | 3.0 mm | 960 | Retro | Standard |
| 56000302 | 6.0 mm | 960 | Retro | Standard |
| 56000303 | 3.0 mm | 4,000 | Retro | Standard |
| 56000304 | 6.0 mm | 4,000 | Retro | Standard |
| 56000305 | 8.0 mm | 800 | Retro | Strong |
| 56000306 | 12.0 mm | 800 | Retro | Strong |

### Standard quality on a roll

**Standard print:**
High quality with a matt finish

**Precut:**
Conventional punch technology for easy handling with large areas

## STANDARD - white / black - reference targets

| Order number | Size | Targets per box | Colour | Adhesive strength | Quality |
|---|---|---|---|---|---|
| 56000201 | 1.5 mm | 6,000 | white/black | Light | Standard |
| 56000202 | 3.0 mm | 6,000 | white/black | Light | Standard |
| 56000203 | 5.0 mm | 6,000 | white/black | Light | Standard |
| 56000204 | 8.0 mm | 5,000 | white/black | Light | Standard |
| 56000205 | 10.0 mm | 3,000 | white/black | Light | Standard |
| 56000206 | 12.0 mm | 3,000 | white/black | Light | Standard |
| 56000207 | 1.5 mm | 6,000 | white/black | Strong | Standard |
| 56000208 | 3.0 mm | 6,000 | white/black | Strong | Standard |
| 56000209 | 5.0 mm | 6,000 | white/black | Strong | Standard |
| 56000210 | 8.0 mm | 5,000 | white/black | Strong | Standard |
| 56000211 | 12.0 mm | 3,000 | white/black | Strong | Standard |

# High performance 3D scanning spray for optical 3D measuring technology

**ATTBLIME®**
High Performance 3D-Scanningspray
Das Original mit CYCLODODECAN

Optimised matting sprays with the high purity established substance cyclododecane. The product series contains three different products with process-specific selectable sublimation times up to residue-free volatilisation, which makes downstream parts cleaning superfluous.

Furthermore, a semi-permanent scanning spray for highest contrasts with easy cleaning is available, based on natural raw materials.

## High performance 3D scanning sprays

### ATTBLIME ABzero

| Description | Order number |
| --- | --- |
| Solvent-reduced for sensitive surfaces;<br>For small and medium components; scan time up to 1 hour;<br>Residue-free sublimation after 1 to 2 hours; no cleaning necessary | 56000401 |

### ATTBLIME AB2

| Description | Order number |
| --- | --- |
| With perfect application of around 3.6 µ;<br>For small and medium components; scan time 1 to 2 hours;<br>Residue-free sublimation after 2 to 4 hours; no cleaning necessary | 56000402 |

### ATTBLIME AB6

| Description | Order number |
| --- | --- |
| Reliably long lasting without re-spraying;<br>For medium to large components; scan time 2 to 6 hours;<br>Residue-free sublimation after 6 to 24 hours; no cleaning necessary | 56000403 |

### ATTBLIME ABP

| Description | Order number |
| --- | --- |
| Semi-permanent scanning spray with the optimised tone cooperative grey;<br>Maximum contrast for the latest generation of optical measuring systems;<br>Scan time arbitrary as no sublimation;<br>Easy removal for residue-free cleaning | 56000404 |

*Order quantity / PU: 6, 12, 48 or 96 aerosol cans with 400 ml*

The high performance 3D scanning sprays are free from ethanol, titanium dioxide, n-hexane and adamantane. The raw material cyclododecane (CDC) contained in the residue-free sublimating scanning sprays does not bioaccumulate in aquatic organisms. CDC is therefore harmless to humans and the environment and can be applied much more sparingly than alternative products. CDC is also exempt from labelling according to GHS / Globally Harmonised System.

The pigments contained in the permanent scanning spray ABP are based on renewable natural raw materials.

All sprays shown are "Made in Germany".

We are happy to supply diverse other products on request.

**TACTILE MEASURING**

**OPTICAL MEASURING**

**MACHINE VISION & SENSOR**

**CONTOUR & SURFACE MEASUREMENT**

**COMPUTED TOMOGRAPHY**

**3D LASER SCANNING**



**dk FIXIERSYSTEME GmbH & Co. KG**
Untere Breite 7
D-72144 Dußlingen

Tel. +49 (0) 7072 60042-0
info@dk-fixiersysteme.de
www.dk-fixiersysteme.de

*modular. simple. better.*

# The entire world of fixating, clamping and positioning

The comprehensive standard construction sets with around 1,000 parts by dk FIXIERSYSTEME for metrology technology offer the following advantages:

» Modular system that has grown and been tried and tested for decades
» Modularity across different lines
» Solutions for every positioning task
» Efficiency through synergetic effects through several industry solutions

*SWA39*


*SPANN**FIX** PRO*


*SPANN**FIX** ECO*


*QUADER**FIX***


*SCHIENEN**FIX***


*MICRO**FIX***


*SWA39**CT***


*SPEZIAL**FIX***


*SWA39**SURF***


**FAST REASSEMBLY LIFELONG**

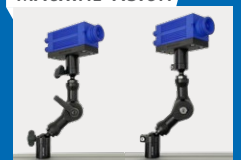*ARTICULATED SYSTEMS*


*MACHINE VISION*


## The basic principle of all dk FIXIERSYSTEME!

Our fixtures have a modular design, may be dismantled at any time and reassembled to their initial state. The compatibility of dk FIXIER-SYSTEME ensures perfect utility value.